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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,266	09/27/2004	Heikki Heikkila	18276	5317

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EXAMINER

THERKORN, ERNEST G

ART UNIT PAPER NUMBER

1723

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,266

Applicant(s)

HEIKKILA ET AL.

Examiner

Ernest G. Therkorn

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 12-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 and 5-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of each of copending Application Nos. 10/373,476, 10/697,763 and 10/670,094. Although the conflicting claims are not identical, they are not patentably distinct from each other because they differ only in an obvious difference in scope.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 4 and 12-32 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim may not depend on other dependent claims. In addition, "any one of the preceding claims" is improper because it should refer to

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particular claims. See MPEP § 608.01(n). Accordingly, the claims 4 and 12-32 have not been further treated on the merits.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-11 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 10/373,476 which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

Claims 1 and 2 are rejected under 35 U.S.C. 102(B) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moore (U.S. Patent No. 6,153,791). The claims are considered to read on Moore (U.S. Patent No. 6,153,791). However, if a difference exists between the claims and Moore (U.S. Patent No. 6,153,791), it would reside in optimizing the steps of Moore (U.S. Patent No. 6,153,791). It would have been obvious to optimize the steps of Moore (U.S. Patent No. 6,153,791) to enhance separation.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722). At best, the claims differ from Moore (U.S. Patent No. 6,153,791) in reciting the materials to be separated. Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625 discloses that sorbose is a carbohydrate. Von Deessen (U.S. Patent No. 5,126,500) (column 1, line 10 and column 4, line 65-column 5, line 6) discloses that 2-keto-L-gulonic acid is a carbohydrate. Boston (U.S. Patent No. 6,599,722) (column 5, lines 41-42) discloses 2-keto-L-gulonic acid is a sugar acid. It

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would have been obvious that the recited materials are separated because Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625 discloses that sorbose is a carbohydrate and either because Von Deessen (U.S. Patent No. 5,126,500) (column 1, line 10 and column 4, line 65-column 5, line 6) discloses that 2-keto-L-gulonic acid is a carbohydrate or because Boston (U.S. Patent No. 6,599,722) (column 5, lines 41-42) discloses 2-keto-L-gulonic acid is a sugar acid.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) as applied to claims 1 and 2 above, and further in view of either Schoenrock (U.S. Patent No. 3,982,956) or Tanikawa (U.S. Patent No. 6,224,683). At best, the claim differs from either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) in reciting use of a weakly acid cation exchange resin. Schoenrock (U.S. Patent No. 3,982,956) (column 1, lines 47-56 and column 2, line 65-column 3, line 20) discloses that use of a weak acid cation exchange resin prior to a weak base anion exchange resin removes undesirable cations. Tanikawa (U.S. Patent No. 6,224,683) (column 1, lines 46-51) discloses a weak acid cation exchange resin aids in softening and demineralization. It would have been obvious to use a weak acid cation exchange resin in Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical

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Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) either because Schoenrock (U.S. Patent No. 3,982,956) (column 1, lines 47-56 and column 2, line 65-column 3, line 20) discloses that use of a weak acid cation exchange resin prior to a weak base anion exchange resin removes undesirable cations or because Tanikawa (U.S. Patent No. 6,224,683) (column 1, lines 46-51) discloses a weak acid cation exchange resin aids in softening and demineralization.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) as applied to claims 1 and 2 above, and further in view of Fries (U.S. Patent No. 4,718,946). At best, the claim differs from either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) in reciting the weakly basic anion exchange resin is an acrylic-based resin. Fries (U.S. Patent No. 4,718,946) (column 1, line 67-column 2, line 12) discloses that use of acrylic in a weakly basic anion exchange resin reduces haze in treating sugar solutions. It would have been obvious to use acrylic in either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) because Fries (U.S. Patent No.

4,718,946) (column 1, line 67-column 2, line 12) discloses that use of acrylic in a weakly basic anion exchange resin reduces haze in treating sugar solutions.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) as applied to claims 1 and 2 above, and further in view of either Haag (U.S. Patent No. 4,145,486) or Katzakian (U.S. Patent No. 5,863,438). At best, the claims differ from either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) in reciting use of styrene crosslinked with divinylbenzene. Katzakian (U.S. Patent No. 5,863,438) (column 6, line 66-column 7, line 14) discloses styrene-divinylbenzene chlormethylates treated with primary or secondary amines are improved weakly basic anion exchange resins. Haag (U.S. Patent No. 4,145,486) (column 5, lines 32-43) discloses styrene-divinylbenzene is a desired resin with which to make a weak base anion exchange resin. It would have been obvious to use styrene-divinylbenzene chlormethylates treated with primary or secondary amines in either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) either because Katzakian (U.S. Patent No. 5,863,438) (column 6, line 66-column 7, line 14) discloses styrene-divinylbenzene

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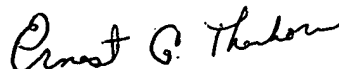
chlormethylates treated with primary or secondary amines are improved weakly basic anion exchange resins or because Haag (U.S. Patent No. 4,145,486) (column 5, lines 32-43) discloses styrene-divinylbenzene is a desired resin with which to make a weak base anion exchange resin.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) as applied to claims 1 and 2 above, and further in view of Pannekeet (U.S. Patent No. 4,051,221). At best, the claim differs from either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) in reciting use of isoprene. Pannekeet (U.S. Patent No. 4,051,221) (column 2, lines 3-39) discloses that isoprene is a known monomer for crosslinking weakly basic anion exchangers. It would have been obvious to use isoprene in either Moore (U.S. Patent No. 6,153,791) alone or Moore (U.S. Patent No. 6,153,791) in view of Hackh's Chemical Dictionary, McGraw Hill, 1972, page 625, and either Von Deessen (U.S. Patent No. 5,126,500) or Boston (U.S. Patent No. 6,599,722) because Pannekeet (U.S. Patent No. 4,051,221) (column 2, lines 3-39) discloses that isoprene is a known monomer for crosslinking weakly basic anion exchangers.

Any inquiry concerning this communication should be directed to E. Therkorn at telephone number (571) 272-1149. The official fax number is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ernest G. Therkorn
Primary Examiner
Art Unit 1723

EGT
March 3, 2006